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ABSTRACT

This paper discusses problems and approaches in assessing intercultural variation in the affective impact of visual aspects of screen media (film and filmstrips). As a first step in approaching the problem, a semantic differential was used to compare responses of Spanish-speaking and English-speaking samples. Each group saw two films and one filmstrip, completing specially developed semantic differential scales after each viewing. The resulting pool of data contained 78 sets of responses from Spanish speakers and 127 sets of responses from English speakers. Results from correlations, factor analyses, and ANOVAs of resulting factor scores are discussed for each sample and for the various films viewed. Evidence for intercultural similarities, as well as differences in judgments, is discussed, as are problems of interpretation caused by limitations in the experimental procedures. (AA)

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INTERCULTURAL VARIATION IN THE AFFECTIVE IMPACT OF SCREEN MEDIA

Paper Read at the National Convention
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INTERCULTURAL VARIATION IN THE AFFECTIVE IMPACT OF SCREEN MEDIA

Films and filmstrips produced in one land with native audiences in mind are often exhibited in other lands as well. Many anecdotes have circulated to the effect that the understandings and impacts derived by foreign audiences from such screen media are not what would be predicted by extrapolation of the native audience's responses.[1] Some kinds of films, e.g. straight nature films, seem relatively immune to important differences across culture. Films intended to instruct or propagandize seem to be particularly prone to confusion or misinterpretation.[2]

In adapting films for foreign exhibition the soundtrack is typically altered to provide a native language version. Evidently, film makers recognize the improbability of the visual element alone providing viewers with the necessary guidance. Since the advent of talkies most films are not made to stand on visuals alone. But one may ask whether altering the soundtrack is sufficient to assure that foreign audiences will get the same message that native audiences do. About the only adaptation of the visual component of a foreign film is the expurgation of whole scenes to avoid the censor's ban.

The visual parts of screen media are not culturally adapted for a variety of reasons. With entertainment films producers have every reason to suppose that the very foreignness of custom, scene, and conduct may be intriguing and entertaining. Second, much that is visual must be virtually universal in intelligibility. Third, producers do not know what elements will fail to be intelligible or to have the proper effect. Even worse, they do not know what to substitute where problems attributable to alien visuals are suspected.

These sorts of problems from a practical point of view are mirrored by basic problems in the relationship of culture and visual experience. As Campbell points out, the vast majority of visual experience must be shared across cultures.[3] However, the subtle sorts of effects and messages that makers of screen media expect will be obtained may well occupy that small minority of cultural variance in visual interpretation. Further, cultural differences among viewers are a way to get at issues of visual innateness versus acquired decoding skills.[4] Hence, both the theoretical and practical problems relate to this intercultural issue.

Specification of Problem Areas

What sorts of visual problems might arise across cultures? Ignorance of visual conventions is one type of problem. Anecdotes circulate about the tribe that was upset by characters who walked off the edge of the frame instead of rounding the corner of a building to remove themselves from the scene. This is matched in perceptual lore by the aborigines who viewed snapshots of themselves from every angle without recognizing the pattern of shadows on the little piece of paper as their picture.[5] The dissolve, the wipe, slow motion and other conventions and effects may be initially puzzling to the neophyte film goer.

Yet context and analogy usually quickly disambiguate the intended meaning of these conventions. The rapid blurred pan which came into vogue in television with "The Man from UNCLE" series did not long puzzle viewers. It denoted transposition in space and time. The use of slow motion in the "Six Million Dollar Man" to convey great power was rather quickly understood by the audience, whether or not they had any familiarity with its prior use in screen media. It seems unlikely that strictly cinematographic conventions could constitute very enduring cultural barriers unless they are derived from a fairly esoteric theatrical genre unique to a particular culture.[6]

A second problem area is the depiction of interpersonal interaction. Cultures differ as to the nonverbal cues utilized there. At the simplest level we have examples of oriental puzzlement over a kiss; why are they biting each other? At a more involved level we have the standards of behavior and deportment regarded as appropriate in one culture but as inappropriate or simply unintelligible in another. Why is the Geisha girl feeling remorse about her relations with the protagonist, and what are we supposed to understand from the Samurai warrior's reactions to her and from the reactions of the family and in-laws to him? When the film maker assumes implicit understanding of culturally unique institutions, traditions, roles, and forms of human response, the efficiency and impact of artistic visual communication may be lost for a foreign audience.

On the other hand, the distribution of commercial films throughout the major cities of most of the world may have led to at least rudimentary understanding of other culture's basic interaction forms, or to the adoption of a fairly standardized and stock set of expectations about foreign behavior, making this difficulty less powerful than it at first appears. Screen media are not primarily being shown to really isolated and primitive groups. The "eye comes old" to the foreign film. The success of foreign films attests to the probability their audiences get something of value from them, and probably that something is not too far removed from what most native audiences have gotten.

A third possibility is that of visual icons or metaphors which produce rapid and powerful understanding in the native audience but are lost upon or puzzle the foreign audience. Foreign films are usually not accompanied by a set of program notes explaining what the visual symbols were intended to mean. For example, a film produced by a church in which the vacillating protagonist saw himself as a large chicken when he looked in a mirror, conveyed the intended message only for North American viewers. The chicken symbolizes cowardice for only one other known culture, and then it is supposed to be a wet chicken; more generally it serves as a symbol for sex, a meaning which was disorienting in the context of this particular film. Effective visual metaphors will often not be self-consciously regarded as metaphors by those for whom they are effective. The metaphor carries an immediacy and impact which would be vitiated by explication.

How serious this problem may be we do not know. In part it is a problem of foreign audiences getting fewer effects from a film. In some glaring instances, confusion and misunderstanding may result. We may expect that more often foreign audiences will get somewhat different understandings or somewhat less of what the film maker intended.

Finally, it is possible that instructional and role-modeling effects on foreign audiences may be less or at least different than with native audience members. To be told how to get along successfully in life by characters whose skin color, features, dress, furniture, and surroundings are alien may have different effects than the producer intended, especially if the source culture is historically suspect. One of the interesting aspects of this problem is that as long as live actors are utilized some cultural traits are unavoidable. Actors have to have some features and skin color, they have to wear clothes of some style, they have to utilize some sort of humanly produced artifacts. A partial compromise may be attempted by mixing races and background, such as "Star Trek" attempted. Still, compromises of ingroup effectiveness may be required to obtain general effectiveness.

These clusters of problems are neither mutually exclusive nor, in all likelihood, exhaustive. They are merely candidates for inclusion in any investigation of the differences in effects of screen media across cultures. In summary, we may look for differences arising from (1) acquaintance with visual conventions, (2) differences in appropriate human interaction and reaction, (3) responses to visual metaphors and symbols, and (4) the very alienness of the people and settings depicted.

We may also find that certain types of purposes are more or less prone to intercultural variability in achievement. A wider spectrum of cultures may find a particular set of films exciting, say, than will find a different set

wise and insightful. Different audiences may be entertained by the same films but for different reasons. Those who produce films for diversion have little concern for what people take from those films as long as they continue to pay the price of attendance. Producers of instructional-motivational films may be more concerned about intercultural differences in impact, although probably not sufficiently so to want to spend money trying to tailor-make a separate film for each culture they have targeted.

For instructional purposes one may ask what a sponsor buys when going from filmstrip to film. Filmstrips can be culturally adapted with relative ease and little expense. Yet it is difficult to believe people would spend money to see a filmstrip; hence entertainment producers are not tempted by the cost difference, which must run on the order of about 20 to 1. Schramm found that distribution problems made films relatively uneconomic as educational tools.[7] In addition, common intuition and experience, theory, and (I am told) some empirical research indicate that the involvement obtained by a film version often precludes the cognitive learning which can be obtained by a filmstrip. Yet, instructional films are still produced, apparently with the expectation that the emotional impact and involvement they may provide will be more important than the cognitive learning they may impede.

It seems that the practice of sponsoring films with other than entertainment objectives in mind must rest on a conviction that something of value to the sponsor is obtained through a film because of an impact and memorability that no other medium can approach. That vague feeling evades most efforts at specification and research.

Acting on the assumption that it would be useful to explore interculturally the emotional impact of screen media of different sorts, and that the exploration ought to focus on emotional impacts, we set about the search for instruments appropriate to the task.

Measurement of Emotional Effects from Screened Media

The many measurement possibilities that come to mind may be roughly grouped into paper-and-pencil, physiological and observational approaches. The paper-and-pencil strategies may be further broken down in terms of how indirect they are and how efficiently they provide data. One might ask people to write short essays describing their feelings after viewing a film. One might ask for short answers on a questionnaire utilizing various sorts of scales. One might try semantic differential techniques. One might attempt more associative approaches where the projections of the respondents were interpreted.

Interculturally, all of these present problems. Osgood's work with intercultural adaptation of the semantic differential suggests that it may be most immediately applicable.[8]

Some intriguing preliminary work using the semantic differential further supported its utility. Using only English speaking, college, volunteer subjects, Anderson and Hubbard were able to find what appeared to be important differences in the semantic differential profiles of four films.[9] They found that the differences among films could be efficiently conveyed pictorially, and that their respective similarity to eleven emotions, which had also been pictorially presented, could be judged. Thus, the profile for "Love to Kill" was quite similar to the profile for "anger" produced by the same subjects. Denotatively, of course, similarities of semantic differential profiles mean nothing, as Osgood himself has pointed out. But they do constitute evidence for similarity of affective response. If equivalent intercultural measures could be obtained from population viewing the identical visuals and if their responses varied more substantially between cultures than within, there would be evidence of cultural differences in emotional response to visual experience.

Recently, Avery and Tiemens used the semantic differential in an analogous effort with slides, albeit on a college sample and without the intercultural complication.[10] Osgood and his students have used the differential approach in several studies with visuals or colors being rated by both Japanese and U.S. students.[11] While these studies often failed to uncover the differences that their authors had expected, none of them came away with explicit reasons for rejecting semantic differentiation as inappropriate to the task for which it had been employed.

We experimented briefly with questionnaires calling on foreign students to recall difficulties they had experienced with films produced in this country. This approach allowed us to inquire specifically after the four kinds of problems outlined previously, but we also discovered that (1) memory was a poor guide for such problem experiences and (2) that there was at least as much intra- as intercultural variation in the extent to which individuals admitted to having experienced difficulties. Similar difficulties presented themselves when a studio-audience discussion method was tried where a new film was shown and audience members provided immediate feedback following the film.

We have been exploring, both experientially and in the literature, the possibility of physiological measurement. Our experience parallels that of Tannenbaum who comments that one of the more reliable aspects of physiological measurement is the certainty of "innumerable and regular equipment problems."[12] Another difficulty with physiological measures for film viewings is the problem of receiving data from many at the same time. Part of

the impact of a film, one may suppose, is attributable to the ambience of other engrossed and reacting viewers. Anyone who has watched a Charlie Chaplin silent film alone in an enormous auditorium can attest to the difference isolation makes. The technology of psychophysiological data collection tends to quickly bog down when more than a single person is hooked into a computer. Our efforts to program for multiple inputs have rather consistantly led to computer gibberish.

A further difficulty relates to the problem of differentiating mere arousal from the distinct kinds of emotional states humans experience. Neurological consultants have discouraged us in our supposition that emotions with similar arousal levels could be distinguished with current instrumentation. We have looked at Clynes "sentic" claims and may try to pursue that line a bit more.[13] Sokolov's claims for skin potential response are also worth noticing since he finds the negative and positive waves at least distinguish noxious from innocuous stimuli.[14] Tannenbaum holds out hope for an approach utilizing the effluents in human breath which can be analyzed by machines with extreme sensitivity and rapidity.[15] All of these possibilities are future.

We have also considered the possibility of unobtrusively filming an audience and subjecting their facial expressions to coding along the lines pioneered by Ekman and Friesen.[16] According to their research, intercultural problems can be handled, especially when the measurements are taken unobtrusively. Thus, if we find U.S. faces reacting with delight while Japanese faces react with puzzlement to the same segment of a film we would have a basis for inferring different effects. Technical problems remain to be solved even with this approach, however.

For purposes of exploration and in hopes of getting on with the task, it was determined to try a semantic differential approach initially and build upon what we learned there before going to other methods of data collection.

Development of Semantic Differential Instruments

As a first, and admittedly pale, approximation of the ideal of using monolingual audiences in their own cultures, we determined to deal with foreign enclaves handy to the campus whose demographic characteristics we would try to match against those of a U.S. sample. We decided to try first a Spanish speaking group to be followed by a Japanese speaking group. To date, we have only completed work on the Spanish and English samples, and this paper will only deal with them.

We obtained copies of the fifty scales Osgood and his associates had developed for Mexican Spanish, and, with the help of a Peruvian research assistant whose specialization in classical languages gave us some confidence that subtle distinctions might be caught, we developed a modified

set of 40 scales. Some of these were taken directly from Osgood's work with an eye to obtaining a reasonable representation of his three factors. The majority, however, were developed to be especially applicable to media evaluation.

Once we had a tentative set developed, we asked 10 foreign students from different Spanish speaking countries to judge them for suitability as qualifiers for cinema. Certain scales did not survive, and certain polar opposites were rejected as inappropriate. After several iterations of this process, we came up with a set of 37 scales which held promise of (1) tapping more than a single dimension and (2) being judged as appropriate for the evaluation of screened media.

We developed a Spanish set of instructions, trained our assistant in administration of the semantic differential materials, and arranged for the cooperation of a suitable group of subjects. These were 37 volunteers who stayed after the evening service in the Spanish Branch of the LDS church to view our materials and complete the semantic differential forms. We learned later that 11 of these volunteers were bilingual with English as their native language. We can only guess as to why they were identifying with the Spanish enclave. This required reanalysis of much of the data eliminating or controlling for the presence of the bilinguals. As will be shown, their response was often substantially different from that of the native speakers.

The English semantic differential materials went through a similar process of selection and refinement. This time we had the experience of the scale's use in film evaluation as well as our own intuitions.

We did not attempt any direct translation from one language to another, and in consequence, only 18 of the 37 scales we settled on in each language were reasonably close approximations of each other. Thus, the factorial structure of the evaluation process in the two languages could be separately determined, even though we could only directly compare responses to the various media experiences based on a factor score from a matrix of the common 18 scales.

Once the English version of the instrument was complete, we obtained the cooperation of a group of townspeople who attended church in the same general area as our Spanish sample. This was our attempt to balance out demographic factors. As will be seen, we were not very successful in this.

Nor were the conditions of administration as similar as we had desired, for although the English speaking group also participated in the study on Sunday, they did so in the afternoon rather than in the evening after a service,

and the volunteers came to the meeting house specifically to participate in the study. We obtained participation from 42 English speaking respondents.

The Media

Both the Spanish and English groups saw two films and one filmstrip in the same order, filling out a semantic differential immediately following each showing. Thus, order is confounded in any cross media comparisons although constant across the two cultural groups. The first film was "Johnny Lingo", an ugly duckling story set indefinitely in the South Seas and depicting the effects on an unlovely young woman of having "the shrewdest trader on the islands" pay an unprecedentedly high bride-price for her. The film's usual effect on English church audiences is one of emotional uplift with the possibility of their reflecting on how they can bring out the best in others by treating them more graciously than they expect. The film is eight years old and lasted 27 minutes.

From a foreigner's standpoint it may be marred by North American stereotypes about the customs of islanders. On the other hand, there is little reason to suppose Latin Americans do not largely share the same stereotypes. Finally, due to the nature of the transformation in the heroine, the film may be offensive to women's liberationists and hence less acceptable today than when it was first made.

The filmstrip which followed was titled "It Started with Thad". It depicts the enthusiasm and success of an eleven-year-old's efforts to proselytize neighbors and associates of his parents in response to the church's call that every member share the gospel with nonmembers. The diffidence and hesitations of his parents are contrasted with Thad's enthusiasm. The filmstrip is somewhat entertaining, although the message it attempts to convey is probably more guilt-producing for most adult church members than that of the other productions used here. The settings in the filmstrip are clearly upper-middle class U.S., tending toward unrealistic orderliness and opulence, even though the main characters typically dress and act with the usual American casualness. It lasted 17 minutes and was made about 6 years ago.

The last film was a Walt Disney cartoon version of Ferdinand the Bull. It incorporated Disney's stereotypes of Spanish bullfighting, but from the reaction of the Latin American audience it would not seem that those stereotypes were offensive to them. It was purely entertainment oriented. The film is an old one, produced in 1935; it lasted eight minutes.

All three were in color with identical visuals but a sound track in the language of the audience. The data were collected on IBM optical-read sheets

with the semantic differential scales printed in red on the sheet. This prevented clerical error in the transmission of the data to computer usable form. Examples of the English and Spanish versions of the instrument are appended.

As indicated, the average number of respondents was 26 Spanish, 11 bilinguals responding in Spanish to the Spanish language version of the productions, and 42 English. Since the volunteers were free to leave at any time, there was some attrition during the course of the viewing and the n's for the three media are not identical.

The Spanish factor analysis was done on all the Spanish data we collected, eliminating the bilinguals. The N for the analysis was 78. The English factor analysis was likewise done for all the English data with an N of 127. Since most individuals contributed three semantic differential evaluations to their respective analysis pool, individual differences may be slightly underestimated in the resulting correlation matrices.

RESULTS

The Demographics of the Sample

In our effort to avoid a contribution to the science of college sophomores, we made the fateful decision to collect data from members of the community who would embody much of the variability to be expected in actual audiences for the media being examined. The simple demographics obtained for each sample are shown in Table 1 below:

Table 1: Relevant Demographic Characteristics of the Sample

		Spanish	English	Bilingual
Average n (across 3 productions		26	42	11
Sex:	Male	32%	40%	56%
	Female	68%	60%	44%
Prior exposure to the production	never seen before	73%	54%	58%
	seen before	27%	46%	42%
Age	Median age	25	43	22
	Variability in age (interquartile range)	9	41	6

As can easily be seen, the groups are demographically different. In particular, the English group shows a much greater variability in age, ranging up to one participant who was 88 while the bilinguals and Spanish were less variable and more youthful. The Spanish group is a little more female although not significantly so by a chi square test, and more likely to never have been exposed to this particular production before, although again not significantly more likely. Although explicit data were not obtained, and the two groups were supposed to have been selected so as to minimize as far as possible socioeconomic differences in the community, informal observation suggested that the English group was more middle class in orientation than the Spanish group. Thus, the differences we might find between cultures are confounded not only by age and possibly sex variables, which can to some extent be explicitly taken into account in the design of the analysis, but also by socioeconomic factors.

The Correlations

The correlations from the Spanish sample were consistently weaker than those from the English sample. For the 18 scales which were approximately translation-equivalent, the English correlations were significantly stronger (by a Fisher z-test using the .01 two tailed criterion of significance) than the Spanish 29 times out of a possible 144; they were never significantly smaller.[17] The only pair of scales to show no significant differences was Fast-Slow versus Rapida-Lenta. On the other hand, seven of the intercorrelations with "Profound-Superficial" were significantly stronger than corresponding correlations with "Profunda-Superficial".

When the data were subdivided according to the closeness of the equivalence between the English and Spanish, with nine scales judged more exactly equivalent and nine less, no detectable difference in the frequency of significant differences occurring could be observed. Indeed, the more exactly equivalent scales had 15 significant differences compared to 14 for the less exactly equivalent.

It happened that of the 18 scales involved in these contrasts, seven had been utilized by L.F. Normore in a similar study of visual response.[18] Normore had the scales judged by 12 volunteer psychology students.

Normore's correlations are presented in Table IIa below. As can be seen, they are incredibly high, no correlation falling below .90. Not surprisingly, factor analysis of the matrix of which these are a part produced a single general factor accounting for 93 percent of the variance.

Table IIa: Intercorrelations among Scales:
Normore's Subjects

	1	2	3	4	5	6
1. Bad-Good						
2. Passive-Active	.98					
3. Simple-Complex	.96	.99				
4. Slow-Fast	.95	.99	.99			
5. Stale-Fresh	.97	.98	.99	.99		
6. Superficial-Profound	.98	.98	.95	.96	.95	
7. Ugly-Beautiful	.99	.90	.94	.92	.95	.94

In contrast, data from our 43 English speaking subjects drawn from the community produced the following correlations for these same seven scales:

Table IIb: Intercorrelations among Scales:
Our English Subjects

	1	2	3	4	5	6
1. Bad-Good						
2. Passive-Active	.63					
3. Simple-Complicated	.02	.15				
4. Slow-Fast	.44	.52	.11			
5. Stale-Fresh	.71	.57	-.09	.37		
6. Superficial-Profound	.55	.39	.16	.23	.49	
7. Ugly-Beautiful	.59	.35	-.32	.24	.59	.63

The correlations from our 26 Spanish respondents on these seven scales

Table IIc: Intercorrelations among Scales:
Our Spanish Subjects

	1	2	3	4	5	6
1. Mala-Buena						
2. Passiva-Activa	.28*					
3. Simple-Complicada	-.13	-.20				
4. Lenta-Rapida	.21	.30	-.09			
5. Sofocante-Fresca	.18*	.22	-.34	.24		
6. Superficial-Profunda	.37	.40	-.04	.01	.12*	
7. Horrible-Linda	.53	.33	-.36	.23	.51	.31*

Casual inspection suggests what Fisher z-tests confirm: in <u>every</u> instance Normore's correlations are stronger than ours. In the case of Simple-Complicated even the signs are different for all of the Spanish and two of the English correlations. The differences between Normore's results and ours

must stem from the vicissitudes of abandoning student subjects and of utilizing real productions as stimuli; Normore had subjects evaluating two-second moving pictures of dots.

The asterisks in the Spanish matrix in Table IIc indicate those Spanish correlations which were significantly weaker than their English counterparts for our subjects. As already noted, the actual analysis was run on the 18 scales which were judged reasonably equivalent across the two samples. Table IIc gives only four of the 29 significant differences we found.

The Factor Analysis: English Data

Using a cut-off eigenvalue of 1.85 (the level at which no additional factor would account for an additional 5 percent of the variance), four factors were extracted from the original 37 variable matrix of scales. The four together accounted for 60.5 percent of the total variance. Inspection of the fourth factor proved it to be essentially null in character; only two variables had their highest loading on it. Furthermore, the four factor solution had nine variables with communalities less than .5 and an additional seven which were factorially complex in the verimax rotation.

Another factor analysis was obtained stipulating three factors and eliminating the five scales which looked least promising. This time 59.2 percent of the total variance was extracted. The eigenvalue of the next factor would have been at the five percent cutoff point. All three factors were adequately defined, even though eight of the variables continued to have communalities less than .5 and five were factorially complex. Although a case might be made for a two or even a one factor solution or for throwing out additional variables, it was decided to select this three factor solution for interpretation. Table III gives the factor loadings and names of each scale ordered by factor. Loadings of less than .45 are omitted for clarity.

Clearly, Factor 1 is the strongest factor, even after rotation. Seventeen of the thirty-two variables have their highest loading on it. although several of them are weak and one has a substantial loading (.58) on Factor 2. At first glance this factor appears not unlike the usual evaluation factor Osgood finds. However, scales ordinarily associated with potency and activity also appear in it. Heavy-Light and Potent-Impotent have their only important loadings on it. Powerful-Powerless and Active-Passive have moderate secondary loadingson it. Osgood has noticed that his usual three variable solution sometimes collapses into a single factor when aesthetic judgments are involved. Perhaps that is what is happening here. On the other hand, the highest loadings in Factor 1 seem to belong to "value"

Table III

English Data: 32 Variables, 3 Factor Solution

Variable	Factor 1	Factor 2	Factor 3	Communality
Helpful-Unhelpful	.79			.79
Valuable-Worthless	.77			.80
Deep-Shallow	.76			.65
Natural-Weird	.74			.60
Tender-Tough	.68			.48
Good-Bad	.66			.69
Wonderful-Awful	.66			.69
Progressive-Regressive	.65			.53
Tasteful-Tasteless	.64			.65
Profound-Superficial	.62			.64
Everlasting-Momentary	.62	.58		.72
Needed-Unneeded	.60			.70
Fresh-Stale	.56			.59
Heavy-Light	.56			.36
Potent-Impotent	.56			.46
Active-Passive	.51		.65	.72
Powerful-Powerless	.51	.61		.64
Delicate-Rugged	.50			.28
Emotional-Calm	.48		.47	.46
Beautiful-Ugly		.74		.71
Agreeable-Disagreeable		.71		.54
Vigorous-Nonvigorous		.69	.46	.69
Energetic-Listless		.67	.53	.73
Sacred-Profane	.44	.67		.65
Zealous-Apathetic		.65		.48
Sweet-Sour		.65		.54
Simple-Complex		.64		.59
Vivacious-Lackadaisical		.63	.53	.68
Miniature-Gigantic		.59		.44
Effervescent-Subdued			.67	.45
Fast-Slow			.64	.47
Brisk-Sluggish			.63	.51
Eigenvalue	8.29	6.85	3.80	
Percent variance	26%	21%	12%	59%

and "depth". There is little indication of an "enjoyment" aspect to the factor, most of the scales being cognitive in character.

It may be that this reflects a psychological set brought to the situation by the subjects. They may be rating the films from the perspective of their value to other people. They were not explicity instructed to use this set, but the principal motivation most of them had for participation was to be helpful to the church that produced the films, and at least some of them may have responded in terms of how "valuable" the films would be for others to see.

The highest loading and cleanest scales on the second factor--Beautiful-Ugly and Agreeable-Disagreeable--seem to suggest a simple kind of aesthetic enjoyment, perhaps not too alien to Berlyne's notion of the "hedonic tone" of the viewing experience.[19] Sweet-Sour also fits that description, at least metaphorically, but matters are complicated by the presence of a strong energy component and an almost equally strong power component. Although shared with other factors in part, Powerful-Powerless and Miniature-Gigantic have their best loadings here. The same is true for Vigorous-Nonvigorous, Energetic-Listless, Zealous-Apathetic, and Vivacious-Lackadaisical. Perhaps these can reasonably be assimilated into a hedonic tone interpretation of Factor 2 if we assume their elements are metaphors for what is enjoyable in the context of screen media. Still, the interpretation is not as straight forward as one would desire.

Factor 3 is less difficult to interpret, even though four of its eight defining scales have more substantial loadings elsewhere. If we consider only the highest loading and purest scales first, it appears as a speed or aggitation factor. Activity is split between it and Factor 1, but still all of its important scales suggest a sense of activity.

In sum, it appears that the three variable factor analysis suggests first a dimension of dynamism colored by a cognitive evaluation of the experience, second a dimension of enjoyment or hedonic tone with some suggestion of power and activity, and third a somewhat weak and impure but nonetheless interpretable activity factor.

The Factor Analysis: Spanish Data

Initially, before the presence of the bilinguals was recognized in the Spanish sample, a factor analysis was run on them specifying an eigenvalue cutoff that would terminate factoring when no additional factor would account for four percent additional unexplained variance. This resulted in a four factor solution accounting for 51.2 percent of the total variance, nine percent less than the four factor English solution managed. Again,

however, the fourth factor was null in character and its inclusion did not greatly assist in clarifying the nature of the other factors.

With the elimination of the bilinguals, the factor analysis was run again, specifying a three factor solution. Although that solution only captured 48 percent of the total variance, it appeared to be interpretable. Still, about half of the variables had communalities below .5 and nine had communalities below .4. If the nine were removed and the analysis repeated the percent of variance accounted for would be more respectable and the factor structure probably little altered, but it seemed best to simply interpret the 37 variable matrix. It is given in Table IV.

Consultation with several faculty specializing in Spanish led to an interpretation of Factor 1 as tapping a dimension of social importance, relevance and realism. The four strongest scales deal with profundity, utility, reality, and wisdom. It is as if these respondents were again judging the cognitive acceptability of the message of the films. Again, they may have been thinking of how much <u>others</u> might profit from the experience.

The lesser loadings of Factor 1 suggest Osgood's dynamism observation. There is a concern not only for how socially useful and profound the experience has been but for how completely it "grabs" you. Despite the differences in the nominal meaning of many of the scales, this outcome seems, subjectively, to be in conformity with the results of the English factor analysis. A more formal test of that impression will be reported in a moment.

Factor 2 appears to be a fairly clear and simple enjoyment factor. Its four highest loadings are on scales for entertainment, enjoyment (Simpatica), bearableness, and beauty. This is quite clearly a pleasure factor, and its independence from the social value issue is understandable. There are things we enjoy which are not good for us, and vice versa.

Factor 3 is somewhat miscellaneous. Its two highest loadings deal with newness and knownness, but familiarity comes much later with a poor loading of .46. Issues of speed, strength, size, and activity present themselves, suggesting a moving quality, but bigness and potency loaded with Factor 1 earlier. Although emotionality, foreignness, and wonderfulness have their best loadings here, they are not high and most of their variance is not accounted for in this analysis. Kindness and temperature fail to load in with any factor here, suggesting they are not appropriate, even metaphorically, in evaluating these productions.

Excluding Factor 3, the Spanish results are clearer than the English. Again, Factors 1 and 2 in the two analyses appear to be rather similar. Theoretically their differentiation makes sense. Future factor analytic efforts might consider structuring themselves with these two criteria in mind.

Table IV

Spanish Data: 37 Variables, 3 Factor Solution

Variable	Factor 1	Factor 2	Factor 3	Communality
Profunda-Superficial (Profound)	.79			.67
Util-Inutil (Useful)	.79			.67
Real-Fantiasoa (Real)	.78			.66
Sabia-Tonta (Wise)	.78			.61
Optimista-Pessima (Optimist)	.65			.53
Grande-Pequena (Big)	.65			.49
Responsable-Irresponsable (Responsible)	.64			.52
Segura-Pelegrosa (Safe)	.59			.49
Podorosa-Impotente (Powerful)	.59		.40	.52
Cercana-Lejana (Near)	.54			.52
Buena-Mala (Good)	.53			.42
Admirable-Despicable (Admirable)	.52		.43	.58
Larga-Corta (Long)	.46			.24
Natural-Rara (Common)	.50	.49		.54
Divertida-Aburrida (Fun)		.79		.66
Simpatica-Antipatica (Pleasant)		.77		.59
Suportable-Insuportable (Bearable)		.77		.67
Linda-Horrible (Beautiful)		.72		.66
Excelente-Pesima (Excellent)		.68		.59
Dulce-Armage (Sweet)		.66		.51
Agradable-Desagradable (Agreeable)		.62		.40
Entretenida-Cansada (Entertaining)		.60		.50
Fresca-Sofocante (Fresh)		.58		.38
Simple-Complicada (Simple)		.53		.29
Brillante-Opaca (Brilliant)		.51		.46
Grandiosa-Insignificante (Huge)	.44	.42		.48
Conocida-Desconocida (Acquainted)			.67	.48
Nueva-Vieja (New)			.62	.46
Familiar-Extrana (Familiar)			.56	.48
Fuerte-Debil (Strong)			.54	.46
Maravillosa-Espantosa (Wonderful)			.52	.52
Gigantesca-Miniature (Gigantic)			.51	.35
Activa-Passiva (Active)	.41		.51	.44
Emociante-Calmada (Emotional)			.46	.36
Rapida-Lenta (Fast)			.46	.24
Piadosa-Cruel (Kind)				.21
Caliente-Fria (Hot)				.12
Eigenvalue	7.22	6.70	3.81	
Percent variance	20%	18%	10%	48%

Comparing Factor Results

While it would be possible to run coefficients of congruence for the English and Spanish results on these data, we might easily be accused of comparing apples and oranges where the scales are not at all translation equivalent. One might easily pair up the highest loading first factor scales from any two factor analyses and generate a high coefficient of congruence, even if one factor analysis was dealing with physical measurements and another with semantics. Helpful-Unhelpful does not mean Profunda-Superficial, even though the impression of their overall meaning in the context of our first two factors is similar.

To compare factor structures we must select out translation equivalent scales and then calculate the coefficients of congruence. Unfortunately, many of the translation equivalent scales are not the scales which most clearly define the factors. There is no English equivalent in the English materials for Simpatica-Antipatica, for instance.

When the 18 translation equivalent scales are extracted and compared Table V results. Even a quick glance shows that only the first principal axis solution has satisfactory congruence for the two cultural groups. Consequently, only a factor score based on the first principal axis solution can be used to compare evaluations across cultures. The only alternative would be to ignore the factor analysis results and compare each scale separately. While we have a precedent for this in Normore's procedures,[20] it does not seem worthwhile to follow it. The resulting analysis would stagger our patience and understanding without much advancing it.

Despite the necessity of retreating to the first principal axis factor for these data, we strongly recommend that future work with semantic differential materials structure them to tap the two important dimensions we feel have been uncovered in this analysis. We would anticipate much better results from examination of coefficients of congruence from that data than we can demonstrate here.

Analysis of Variance Results

The dependent variable in these tests was a factor score based on the first principal axis factor just discussed. It incorporated judgments from both Spanish and English groups on the 18 scales which were translation equivalent. This dependent variable seems to reflect principally a judgment of the goodness, utility, and beauty of the experience, as can be seen from the factor loadings shown in Table VI. Still, scales for power and activity also load on it. The only scale really not associated with it at all is Simple-Complicated. In consequence, scores from that scale were entered as a separate dependent variable in each analysis. As they never generated

Table V: Coefficients of Congruence for Three English and Three Spanish Factors on 18 Translation Equivalent Scales: Both Principal Axis and Verimax Results Shown

Principal Axis

		Spanish 1	2	3
English	1	.92	.19	-.12
	2	-.12	-.50	-.30
	3	-.35	.11	-.59

Verimax Rotation

		Spanish 1	2	3
English	1	.67	.72	.78
	2	-.69	-.56	-.62
	3	-.06	-.05	.21

Table VI: Factor Loadings for a Composite English-Spanish Analysis Using 18 Translation Equivalent Scales

Scale	Loading	Scale	Loading
Wonderful-Awful	.81	Potent-Impotent	.66
Good-Bad	.80	Active-Passive	.63
Valuable-Worthless	.70	Natural-Weird	.62
Needed-Unneeded	.78	Agreeable-Disagreeable	.59
Beautiful-Ugly	.77	Gigantic-Miniature	.54
Powerful-Powerless	.73	Emotional-Calm	.49
Fresh-Stale	.72	Tender-Tough	.46
Profound-Superficial	.70	Fast-Slow	.40
Sweet-Sour	.67	Simple-Complicated	.19

significant results, they will not be mentioned further. The factor score based on the other 17 had a mean of zero and a standard deviation of 1, the unit normal variate. Thus, although the raw score means were generally in the positive range on all the productions, many of the factor score means are, of necessity, negative.

The independent variables were (1) language/culture, (2) sex, and (3) prior familiarity with the production. Prior familiarity was dichotomized in this analysis, there being too few subjects who had seen the productions more than once to allow any hope of designs without missing cells if familiarity was further subdivided. The rationale for considering familiarity as an independent variable arises from Berlyne's findings that it often has important impact on evaluation,[21] as well as from common experience to the same effect. Sex was an obvious independent variable, especially in view of findings showing consistent imagery differences between the sexes.[22] Culture/language was our principal variable of interest. When inclusion of the bilinguals did not result in empty cells, this dependent variable had three levels; otherwise only the English and Spanish data were tested. Statistical consultants counseled against attempting to include the three productions as a separate factor in a single analysis of variance. In consequence, each was analyzed independently.

Results: Johnny Lingo

With bilinguals excluded, the film "Johnny Lingo" generated a significant main effect for language ($F = 7.35$ with 1 and 64 df). The mean factor scores were .01 for the Spanish and -.47 for the English, indicating that, in the context of all the material viewed, the Spanish respondents rated this film as neutral whereas the English rated it relatively negatively. There was no significant main effect for familiarity or sex but there was a significant interaction effect involving those two. With familiarity, males of both groups became more positive. The interaction is an almost completely crossing one; means for males go from -.01 to -.51 whereas those for females go from -.39 to -.02.

When the bilinguals are included in the analysis for this film, the main effect difference is retained with the bilinguals disliking it even more than the monolingual English! However, the sex/familiarity interaction ceases to be significant, even though the basic trends are ratained. With the 14 bilinguals (7 males and 7 females) in to muddy the picture, males go from -.27 to -.54 while females go in the opposite direction from -.36 to -.23. The bilinguals dislike of the film has not only depressed the means but dampened the degree of contrast between the effects of familiarity on males and on females. This means that bilingual males were a little more negative on first exposure and a little less on later exposure, while the bilingual females demonstrated a tendency the reverse of their monolingual sisters.

The analysis including bilinguals also produced a significant triple interaction ($F = 4.16$ with 2 and 74 df). The pattern showed that new viewers held higher opinions of the film in every instance with the exception of the Spanish females whose ratings improved dramatically for those who had seen it before. As can be seen in Figure 1, the English males and females were virtually indistinguishable in their trends over time. In contrast, the Spanish males and females were very different in their trends. Bilingual males were negative regardless of familiarity but bilingual females showed a pattern similar to that of the Spanish males. The significance of the triple interaction must be in the main attributable to the contrary response of the Spanish females.

All the interaction terms involving sex may be in response to the content of the film. Johnny Lingo's bride price of eight cows for the ugly duckling heroine in a culture where the average going rate is closer to three or four and a really desirable wife could be had for five may not sit well with most female viewers. Perhaps the contrary pattern of the Spanish females reflects their lack of "emancipation" or their general willingness to accept older stereotypes of feminine role and position. On the other hand, this explanation flies in the face of the fact that the English sample, not the Spanish, tended to be elderly and hence, one might suppose, "unliberated". Furthermore, it is not a plausible account for the negative reaction of first time Spanish females in contrast to the positive reaction of first time Spanish males. The interaction's presence came as a surprise and perhaps must remain unexplained.

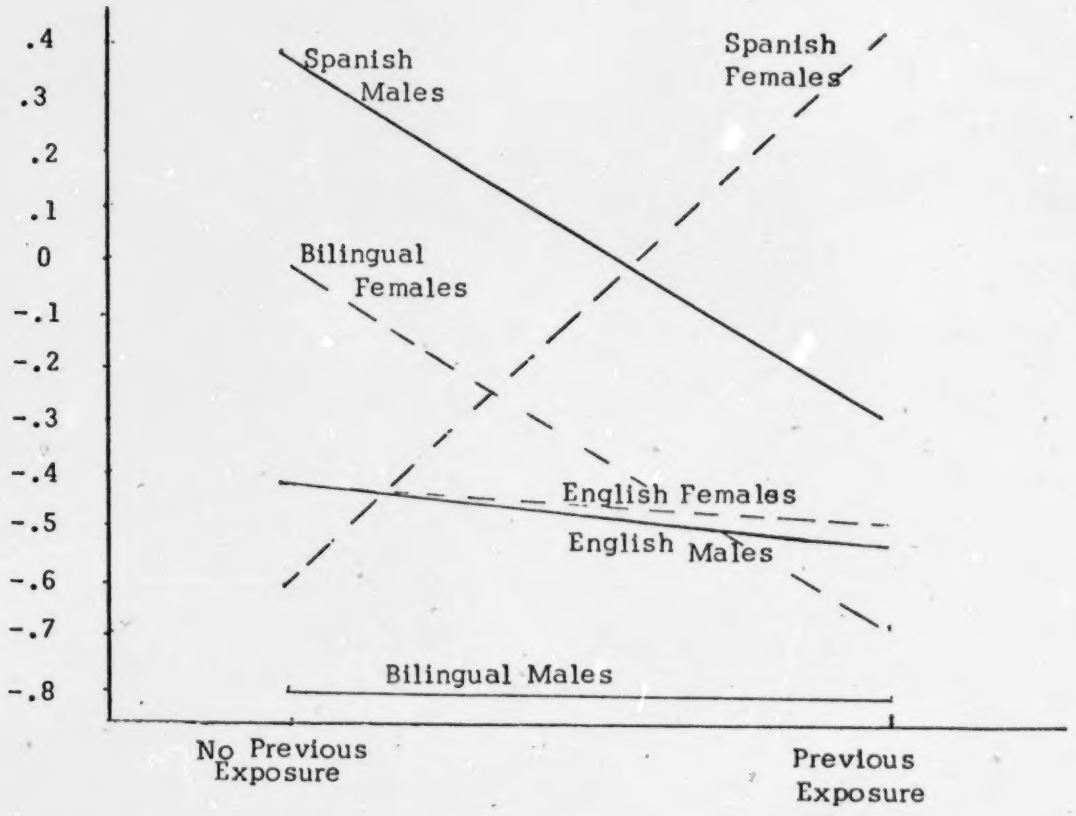
Results: It Started with Thad

No significant differences in main effects or interactions were found for the filmstrip. The means for the Spanish and English groups were almost identical at -.21 and -.23 respectively. None of the Spanish subjects were familiar with this filmstrip, so that factor had to be dropped from the analysis. This production was judged to be one which might excite foreign rejection due to the white-upper-middle-class bias of the scenes. No support for that notion was obtained.

Results: Ferdinand the Bull

Ferdinand was both the shortest (8 minutes) and the slickest production viewed. It was, ostensibly, pure entertainment without didactic intent. The only significant difference was a main effect difference between English and Spanish speaking viewers ($F = 12.03$). The English rated the film at 1.10 while the Spanish gave it a .10. When the analysis was rerun with the 11 bilinguals counted among the Spanish group, the group with which they had encountered the film and completed the semantic differentials, the

Figure 1: Triple Interaction of Sex, Familiarity, and Language for the Film "Johnny Lingo."



Means and Ns for the Above Figure *

	Spanish		English		Bilingual	
	Male	Female	Male	Female	Male	Female
No Previous Exposure	.39 (4)	-.63 (6)	-.43 (9)	-.43 (10)	-.79 (4)	-.02 (4)
Previous Exposure	-.27 (10)	.43 (7)	-.54 (10)	-.48 (16)	-.80 (3)	-.67 (3)

*Ns are in parentheses

F for language was stronger (21.09). The bilinguals could not be run as a separate group since they produced null cells in the analysis when all the combinations of sex, familiarity, and language were formed. The bilinguals as a whole evidently liked the film less than either the Spanish or English, since they pulled the mean for the Spanish down to -.01; this suggests the bilingual mean would have been around -.29.

These results come as a bit of a surprise since the more elderly audience of the English viewing was the only one which volunteered criticism of the cartoon. Perhaps this reflected an isolated instance of impatience at something so obviously without serious purpose.

DISCUSSION

There are two basic ways in which intercultural differences in the evaluation of these screened media might have appeared. First, the structure of the criteria used to judge the experience might have been different. Second, the actual evaluations given to the specific media might have differed, even if the criteria had not.

It appears that the structure of the judgments, to the extent we have been able to discover it, is not greatly different between our two groups. In retrospect we wish more effort had been spent building the semantic differential instruments from the ground up. Either more careful interviews with culture bearers who were also astute cinema connoisseurs should have been tried, or we should have gone to the trouble of the associative scheme Osgood employed.[23] We might, that is, have asked 30 or so natives for the qualifiers they would apply to 30 or so screened media, and out of the tabulations from that effort have constructed our instrument. Perhaps that raw-empiricist step cannot be skipped. Still, from what we have learned here we are now inclined to suggest structuring a two factor instrument to tap enjoyment and social value respectively. We do not believe that it will do to simply assume an EPA structure and omit the factor analysis step in assessing screened media.

When we force both cultural groups into the same mold by using only translation equivalent scales and the general factor that results, we find some differences associated with language/culture. These, however, are confounded by the extraneous variables which cropped up because of our decision to use a real world population instead of college students. For instance, the cultural differences found in the first film seemed most plausibly related to the implicit content of that film, dealing as it did with

relationships among men and women, rather than to any clear differences in the intelligibility of the visuals. The differences in the evaluation of the Ferdinand film might reflect Spanish rejection of the Walt Disney stereotypes, but could also have arisen from a number of other differences between the two samples.

In retrospect, we began to question the logic of hoping to detect something as subtle as differences in response to a common visual experience by the means as crude and samples as variable as those we utilized. What kind of results would have clearly confirmed differences in response to the visuals? Too late, we realized that our methods could at best be suggestive and perhaps serendipitiously insight-producing. In particular, one might suppose that utilizing a foreign language enclave for this research was not a very good way to approximate the results that might be expected in foreign settings with monolingual subjects.

A further criticism occurred to us as the number of computer runs and the complexity of the analysis mounted. Factor analysis of semantic differential data may not be capable of answering questions as inchoate and vague as the differences we expected may be.[24] The fact that the Emotional-Calm scale was never a very important or clean variable in the analysis did not square with our supposition that emotional impact was one of the more important reasons sponsors had for spending resources on films instead of utilizing other means.

Yet, reviewing the methods alluded to earlier in the paper and considering the disadvantages of the alternatives, we are not sure a different decision would be made now. With greater commitment of resources, perhaps the most useful and least obtrusive approach would be to videotape the facial expressions of audience members for later evaluation by judges trained in Ekman's methods. Although the technical problems in this approach are formidable and would be especially so if we attempted to set up shop in various foreign settings, its use would avoid the ambiguities of self-report and would directly tap the nature and magnitude of the affective response, doing so in real time as the productions ran rather than merely obtaining a summative evaluation afterward.

We should have paid more explicit attention to the memorability issue, perhaps along the lines Paivio has used where incidental learning becomes the focus of attention.[25] His dual coding hypothesis provides a strong theoretical base for such work and his own methods might be adaptable to the task of comparing the memorability effects of screened media for different cultures.

Finally, the next work we do will explicitly incorporate Schachter's two factor theory of emotions.[26] We are encouraged to think that there may be some link between his two factors and our factor analysis results. If cognitive direction is related to evaluation of the wisdom and utility of content while basic arousal relates to enjoyment levels, theory and data may be running in the same direction. Schater's ideas were discovered too late for us to incorporate them into the research here reported. That will not be the case in the future.

FOOTNOTES

1. Examples: The tribal group that congratulated itself on living in an area where flies were so much smaller than the monsters they had seen depicted in the sanitation propaganda sent their way. The USIS effort in a middle eastern country to depict U.S. military strength, high standards of living, and the happiness and health of our people which served among many viewers to confirm in their minds the communist accusations that we were basically immoral (women with legs and faces showing in public) and warmongering exploiters (only exploiters have such homes and consumer goods in their country). On the other had, a U.S. film which was reluctantly allowed to circulate in Europe and which showed striking workers being beaten by police is said to have impressed certain working class groups with the fact that the workers had shoes!

2. Hyman reports a predominantly favorable impression of life in the West arising among Burmese movie-goers who had seen the films like "Man and Woman", "Loving You", "Rock Baby Rock", "Night Heaven", "Beautiful but Bad", "Expresso Bongo", "The Young Lions", "Dracula", "She Demons", "The Defiant Ones", "And God Created Woman", "Steel Jungle", "Jailhouse Rock", "Imitation of Life", "Blackboard Jungle", "Objective Burma", "Abdullah the Great", and "Son of Robin Hood". Beyond entertainment, what results from entertainment films in foreign settings is truly difficult to predict. Herber Hyman, "Mass Media and Political Socialization: The Role of Patterns of Communication", in Lucian Pye (ed.), Communications and Political Development, Princeton, N.J., Princeton University Press, 1963, p. 128.

3. Donald T. Campbell, "Distinguishing Differences of Perception from Failures of Communication in Cross-Cultural Studies", in F.S.C. Northrop and Helen H. Livingston (arr. and eds.), Cross-Cultural Understanding: Epistemology in Anthropology, New York, Harper & Row, 1964, chap. 18, pp. 308-336.

4. For insight on the perplexities of issues see Donis A. Dondis, A Primer of Visual Literacy, Cambridge Mass., MIT Press, 1974.

5. The story of the native reactions to snapshots is found in Nelson Goodman, The Languages of Art, Indianapolis, Bobbs-Merrill, 1968, p. 15n. The origin of the other story is lost to me.

6. I once watched a Japanese movie on TV for some time and was puzzled by the presence of men clothed completely in black who flitted through the scenes every now and then without apparent notice from the other

characters. I am told most Japanese movies do not use the traditional prop men from Kibucki theatre as this one did. The initial lack of knowledge of the conventions of the genre helped to perplex me, and together with the alien interaction and motivations of the characters eventually led me to turn away.

7. Wilbur L. Schramm, Big Media, Little Media: Tools & Technologies for Instructions, Beverly Hills, Sage Publishing, 1977.

8. Charles E. Osgood, William H. May, and Murray S. Miron, Cross-Cultural Universals of Affective Meaning, Urbana Ill., University of Illinois Press, 1975.

9. Steven J. Anderson and David Hubbard, "Emotional Responses to Mediated Messages", mimeo, Communication Research Center, Brigham Young University, 1976.

10. Robert K. Avery and Robert K. Tiemens, "The Syntax of Visual Messages: An Empirical Investigation of the Asymmetry of the Frame Theory", paper presented to the SCA Convention, 1975.

11. Y. Tanaka, T. Oyama, and C.E. Osgood, "A Cross-cultural and Cross-concept Study of the Generality of Semantic Spaces", Journal of Verbal Learning and Verbal Behavior, 2 (1063), 392-405; T. Oyama, Y. Tanaka, and J. Haga, "Color-affection and Color-symbolism in Japanese and American Students", Japanese Journal of Psychology, 34 (1963), pp. 109-121; Y. Tanaka and Y. Chiba, "Affective Dimensions of Colours: A Cross Cultural Study", Japanese Psychological Research, 4 (1962), pp. 78-91.

12. Percy H. Tannenbaum, "Studies in Film and Television Mediated Arousal and Aggression: A Progress Report", in G.A. Comstock, E.A. Rubenstein, and J.P. Murray (eds.), Television and Social Behavior, Vol. 5, Washington, D.C., U.S. Government Printing Office, 1972, p. 319.

13. Manfred Clynes, "Sentics: Biocybernetics of Emotional Communication", Annals of the New York Academy of Sciences, 220 (1973), pp. 55-131. Also Manfred Clynes, Sentics: The Touch of Emotions, Garden City, N.Y., Anchor Press/Doubleday, 1977.

14. E.N. Sokolov, Perception and the Conditioned Reflex, New York, Pergamon, 1963. Further Detail is found in R. Lynn, Attention, Arousal, and the Orientation Reaction, Oxford, Pergamon, 1966.

15. Tannenbaum, op cit, p. 321-22.

TITULO _____ IDIOMA NATIVO _____ EDAD _____ SEXO _____

AGRADABLE	1 2 3 4 5 6 7	DESAGRADABLE	RESPONSABLE	1 2 3 4 5 6 7	IRRESPONSABLE
CALIENTE	1 2 3 4 5 6 7	FRIA	REAL	1 2 3 4 5 6 7	FANTACIOSA
NUEVA	1 2 3 4 5 6 7	VIEJA	ACTIVA	1 2 3 4 5 6 7	PASIVA
GRANDIOSA	1 2 3 4 5 6 7	INSIGNIFICANTE	BUENA	1 2 3 4 5 6 7	MALA
ADMIRABLE	1 2 3 4 5 6 7	DESPRECIABLE	RAPIDA	1 2 3 4 5 6 7	LENTA
ENTRETENIDA	1 2 3 4 5 6 7	CANSADA	GRANDE	1 2 3 4 5 6 7	PEQUEÑA
LARGA	1 2 3 4 5 6 7	CORTA	FRESCA	1 2 3 4 5 6 7	SOFOCANTE
FUERTE	1 2 3 4 5 6 7	DEBIL	PODEROSA	1 2 3 4 5 6 7	IMPOTENTE
GIGANTESCA	1 2 3 4 5 6 7	MINIATURA	EMOCIONANTE	1 2 3 4 5 6 7	CALMADA
SIMPATICA	1 2 3 4 5 6 7	ANTIPATICA	BRILLANTE	1 2 3 4 5 6 7	OPACA
SABIA	1 2 3 4 5 6 7	TONTA	EXCELENTE	1 2 3 4 5 6 7	PESIMA
MARAVILLOSA	1 2 3 4 5 6 7	ESPANTOSA	DULCE	1 2 3 4 5 6 7	AMARGA
PROFUNDA	1 2 3 4 5 6 7	SUPERFICIAL	UTIL	1 2 3 4 5 6 7	INUTIL
LINDA	1 2 3 4 5 6 7	HORRIBLE	OPTIMISTA	1 2 3 4 5 6 7	PESIMISTA
DIVERTIDA	1 2 3 4 5 6 7	ABURRIDA	CONOCIDA	1 2 3 4 5 6 7	DESCONOCIDA
SEGURA	1 2 3 4 5 6 7	PELIGROSA	FAMILIAR	1 2 3 4 5 6 7	EXTRAÑA
PIADOSA	1 2 3 4 5 6 7	CRUEL	CERCANA	1 2 3 4 5 6 7	LEJANA
SOPORTABLE	1 2 3 4 5 6 7	INSOPORTABLE	NATURAL	1 2 3 4 5 6 7	RARA
SIMPLE	1 2 3 4 5 6 7	COMPLICADA			

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TITLE_____ NATIVE LANGUAGE_____ AGE___ SEX___ INITIALS_____

HEAVY	1	2	3	4	5	6	7	LIGHT		SOUR	1	2	3	4	5	6	7	SWEET
UGLY	1	2	3	4	5	6	7	BEAUTIFUL		DEEP	1	2	3	4	5	6	7	SHALLOW
MILD	1	2	3	4	5	6	7	HARSH		MOMENTARY	1	2	3	4	5	6	7	EVERLASTING
DELICATE	1	2	3	4	5	6	7	RUGGED		ACTIVE	1	2	3	4	5	6	7	PASSIVE
EFFERVESCENT	1	2	3	4	5	6	7	SUBDUED		HELPFUL	1	2	3	4	5	6	7	UNHELPFUL
LOUD	1	2	3	4	5	6	7	SOFT		PROFANE	1	2	3	4	5	6	7	SACRED
VALUABLE	1	2	3	4	5	6	7	WORTHLESS		TRANQUIL	1	2	3	4	5	6	7	STIRRING
UNNEEDED	1	2	3	4	5	6	7	NEEDED		GOOD	1	2	3	4	5	6	7	BAD
BRISK	1	2	3	4	5	6	7	SLUGGISH		AGITATED	1	2	3	4	5	6	7	STILLED
SUPERFICIAL	1	2	3	4	5	6	7	PROFOUND		LACKADAISICAL	1	2	3	4	5	6	7	VIVACIOUS
APATHETIC	1	2	3	4	5	6	7	ZEALOUS		WONDERFUL	1	2	3	4	5	6	7	AWFUL
FRESH	1	2	3	4	5	6	7	STALE		TASTEFUL	1	2	3	4	5	6	7	TASTELESS
LISTLESS	1	2	3	4	5	6	7	ENERGETIC		MINIATURE	1	2	3	4	5	6	7	GIGANTIC
NON-VIGOROUS	1	2	3	4	5	6	7	VIGOROUS		FAST	1	2	3	4	5	6	7	SLOW
HAPPY	1	2	3	4	5	6	7	SAD		EMOTIONAL	1	2	3	4	5	6	7	CALM
PROGRESSIVE	1	2	3	4	5	6	7	REGRESSIVE		DISAGREEABLE	1	2	3	4	5	6	7	AGREEABLE
TENDER	1	2	3	4	5	6	7	TOUGH		NATURAL	1	2	3	4	5	6	7	WEIRD
POTENT	1	2	3	4	5	6	7	IMPOTENT		COMPLICATED	1	2	3	4	5	6	7	SIMPLE
POWERLESS	1	2	3	4	5	6	7	POWERFUL										

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16. Paul Ekman and Wallace V. Friesen, Unmasking the Face: A Guide to Recognizing Emotions from Facial Clues, Englewood Cliffs, N.J., Prentice-Hall, 1975.

17. This is the test for the significance of the difference in intercorrelations of the same variable measured on different samples. See Helen Walker and Joseph Lev, Statistical Inference, New York, Holt, Rinehart & Winston, 1953, pp. 255-257.

18. L.F. Normore, "Verbal Responses to Visual Sequences which Vary in Uncertainity Level", in D.E. Berlyne (ed.), Studies in the New Experimental Aesthetics: Steps Toward an Objective Psychology of Aesthetic Appreciation, New York, John Wiley & Sons, 1974, pp. 109-119.

19. Ibid, pp. 126-136, 227-223, and 288-295.

20. Ibid, pp. 112, 114, 116.

21. D.E. Berlyne, op cit, pp. 121-158.

22. See for example Francis J. Di Vesta, Gary Ingersoll, and Phyllis Sunshine, "A Factor Analysis of Imagery Tests", Journal of Verbal Learning and Verbal Behavior, 10 (1972), pp. 471-479.

23. Osgood, op cit, pp. 68-110.

24. A critique apropos this concern is Gary Cronkhite and Jo Liska, "A Critique of Factor Analytic Approaches to the Study of Credibility", Communication Monographs, 43 (1976), pp. 91-107.

25. Allan Paivio, Imagery and Verbal Processes, New York, Holt, Rinehart & Winston, 1971.

26. Stanley Schachter, "The Interaction of Cognitive and Physiological Determinants of Emotional State", in L. Berkowitz (ed.), Advances in Experiemental Social Psychology, vol. 1, New York, Academic Press, 1964, 49-80.